In the Claims

For the convenience of the Examiner, all pending claims are set forth below, whether or not an amendment is made. Please amend the claims as follows:

1. (Currently Amended) A method for performing operations using quantum correlithm objects, comprising:

receiving input associated with a plurality of real states;

establishing ~~a plurality~~ the plurality of real states from the input, each real state comprising an element of a real space;

encoding the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

projecting the correlithm object to the real space using a measurement basis;

determining a plurality of measurement values corresponding to the measurement basis; ~~basis; and~~

retrieving the projected correlithm object according to the measurement ~~values~~ values; and

providing output indicating the projected correlithm object.

2. (Original) The method of Claim 1, wherein a quantum object of the plurality of quantum objects comprises an object selected from a group consisting of a quantum bit, a quantum register, and an ebit.

3. (Original) The method of Claim 1, wherein encoding the real states as the quantum objects comprises assigning a plurality of values to the real states.

4. (Original) The method of Claim 1, wherein encoding the real states as the quantum objects comprises adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state.

5. (Original) The method of Claim 1, wherein:

each quantum object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

6. (Original) The method of Claim 1, further comprising performing an intermediate operation prior to determining the plurality of measurement values corresponding to the measurement basis.

7. (Original) The method of Claim 1, wherein retrieving the projected correlithm object according to the measurement values comprises:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

8. (Original) A system for performing operations using quantum correlithm objects, comprising:

a source operable to establish a plurality of real states, each real state comprising an element of a real space;

a first filter operable to encode the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

a second filter operable to project the correlithm object to the real space using a measurement basis, the second filter matched with the first filter; and

an analyzer operable to:

determine a plurality of measurement values corresponding to the measurement basis; and

retrieve the projected correlithm object according to the measurement values.

9. (Original) The system of Claim 8, wherein a quantum object of the plurality of quantum objects comprises an object selected from a group consisting of a quantum bit, a quantum register, and an ebit.

10. (Original) The system of Claim 8, wherein the first filter is operable to encode the real states as the quantum objects by assigning a plurality of values to the real states.

11. (Original) The system of Claim 8, wherein the first filter is operable to encode the real states as the quantum objects by adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state.

12. (Original) The system of Claim 8, wherein:

each quantum object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

13. (Original) The system of Claim 8, wherein an intermediate operation is performed prior to determining the plurality of measurement values corresponding to the measurement basis.

14. (Original) The system of Claim 8, wherein the analyzer is operable to retrieve the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

15. (Original) A computing system for performing operations using quantum correlithm objects, comprising:

a database operable to store data; and

a server system coupled to the database operable to:

establish a plurality of real states, each real state comprising an element of a real space;

encode the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

project the correlithm object to the real space using a measurement basis;

determine a plurality of measurement values corresponding to the measurement basis; and

retrieve the projected correlithm object according to the measurement values.

16. (Original) The computing system of Claim 15, wherein a quantum object of the plurality of quantum objects comprises an object selected from a group consisting of a quantum bit, a quantum register, and an ebit.

17. (Original) The computing system of Claim 15, wherein the server system is operable to encode the real states as the quantum objects by assigning a plurality of values to the real states.

18. (Original) The computing system of Claim 15, wherein the server system is operable to encode the real states as the quantum objects by adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state.

19. (Original) The computing system of Claim 15, wherein:

each quantum object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

20. (Original) The computing system of Claim 15, wherein the server system is operable to perform an intermediate operation prior to determining the plurality of measurement values corresponding to the measurement basis.

21. (Original) The computing system of Claim 15, wherein the server system is operable to retrieve the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

22. (Currently Amended) Logic for performing operations using quantum correlithm objects, the logic ~~embodied~~ encoded in a computer-readable storage medium and operable to:

receive input associated with a plurality of real states;

establish ~~a plurality~~ the plurality of real states from the input, each real state comprising an element of a real space;

encode the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

project the correlithm object to the real space using a measurement basis;

determine a plurality of measurement values corresponding to the measurement basis; ~~basis; and~~

retrieve the projected correlithm object according to the measurement ~~values~~ values; and

provide output indicating the projected correlithm object.

23. (Original) The logic of Claim 22, wherein a quantum object of the plurality of quantum objects comprises an object selected from a group consisting of a quantum bit, a quantum register, and an ebit.

24. (Original) The logic of Claim 22, operable to encode the real states as the quantum objects by assigning a plurality of values to the real states.

25. (Original) The logic of Claim 22, operable to encode the real states as the quantum objects by adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state.

26. (Original) The logic of Claim 22, wherein:

each quantum object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

27. (Original) The logic of Claim 22, operable to perform an intermediate operation prior to determining the plurality of measurement values corresponding to the measurement basis.

28. (Original) The logic of Claim 22, operable to retrieve the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

29. (Currently Amended) A system for performing operations using quantum correlithm objects, comprising:

means for receiving input associated with a plurality of real states;

means for establishing ~~a plurality~~ the plurality of real states from the input, each real state comprising an element of a real space;

means for encoding the real states as a plurality of quantum objects, the quantum objects representing a correlithm object;

means for projecting the correlithm object to the real space using a measurement basis;

means for determining a plurality of measurement values corresponding to the measurement basis; ~~basis; and~~

means for retrieving the projected correlithm object according to the measurement ~~values~~ values; and

means for providing output indicating the projected correlithm object.

30. (Currently Amended) A method for performing operations using quantum correlithm objects, comprising:

receiving input associated with a plurality of real states;

establishing ~~a plurality~~ the plurality of real states from the input, each real state comprising an element of a real space;

encoding the real states as a plurality of quantum objects by assigning a plurality of random values to the real states, and by adjusting a characteristic of a plurality of subatomic particles according to a distribution, each subatomic particle corresponding to a real state, the quantum objects representing a correlithm object, a quantum object of the plurality of quantum objects comprising an object selected from a group consisting of a quantum bit, a quantum register, and an ebit;

projecting the correlithm object to the real space using a measurement basis;

performing an intermediate operation prior to determining the plurality of measurement values corresponding to the measurement basis;

determining a plurality of measurement values corresponding to the measurement basis, each quantum object associated with a probability, and the measurement values determined in accordance with the probabilities; and

retrieving the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; ~~metric; and~~

retrieving the projected correlithm object in accordance with the ~~comparison~~ comparison; and

providing output indicating the projected correlithm object.

31. (Currently Amended) A method for performing operations using physical correlithm objects, comprising:

receiving input associated with a plurality of real states;

establishing ~~a plurality~~ the plurality of real states from the input, each real state comprising an element of a real space;

encoding the real states as a plurality of physical objects, the physical objects representing a correlithm object;

projecting the correlithm object to the real space using a measurement basis;

determining a plurality of measurement values corresponding to the measurement basis; ~~basis; and~~

retrieving the projected correlithm object according to the measurement ~~values~~ values; and

providing output indicating the projected correlithm object.

32. (Original) The method of Claim 31, wherein encoding the real states as the physical objects comprises assigning a plurality of values to the real states.

33. (Original) The method of Claim 31, wherein:

each physical object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

34. (Original) The method of Claim 31, wherein retrieving the projected correlithm object according to the measurement values comprises:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

35. (Original) A system for performing operations using physical correlithm objects, comprising:

a database operable to store data; and

a server system coupled to the database operable to:

establish a plurality of real states, each real state comprising an element of a real space;

encode the real states as a plurality of physical objects, the physical objects representing a correlithm object;

project the correlithm object to the real space using a measurement basis;

determine a plurality of measurement values corresponding to the measurement basis; and

retrieve the projected correlithm object according to the measurement values.

36. (Original) The system of Claim 35, the server system operable to encode the real states as the physical objects by assigning a plurality of values to the real states.

37. (Original) The system of Claim 35, wherein:

each physical object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

38. (Original) The system of Claim 35, the server system operable to retrieve the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

39. (Currently Amended) A logic for performing operations using physical correlithm objects, the logic ~~embodied~~ encoded in a computer-readable storage medium and operable to:

receive input associated with a plurality of real states;

establish ~~a plurality~~ the plurality of real states from the input, each real state comprising an element of a real space;

encode the real states as a plurality of physical objects, the physical objects representing a correlithm object;

project the correlithm object to the real space using a measurement basis;

determine a plurality of measurement values corresponding to the measurement basis; ~~basis; and~~

retrieve the projected correlithm object according to the measurement ~~values~~ values; and

providing output indicating the projected correlithm object.

40. (Original) The logic of Claim 39, operable to encode the real states as the physical objects by assigning a plurality of values to the real states.

41. (Original) The logic of Claim 39, wherein:

each physical object is associated with a probability; and

the measurement values are determined in accordance with the probabilities.

42. (Original) The logic of Claim 39, operable to retrieve the projected correlithm object according to the measurement values by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; and

retrieving the projected correlithm object in accordance with the comparison.

43. (Currently Amended) A system for performing operations using physical correlithm objects, comprising:

means for receiving input associated with a plurality of real states;

means for establishing ~~a plurality~~ the plurality of real states from the input, each real state comprising an element of a real space;

means for encoding the real states as a plurality of physical objects, the physical objects representing a correlithm object;

means for projecting the correlithm object to the real space using a measurement basis;

means for determining a plurality of measurement values corresponding to the measurement basis; ~~basis; and~~

means for retrieving the projected correlithm object according to the measurement ~~values~~ values; and

means for providing output indicating the projected correlithm object.

44. (Currently Amended) A method for performing operations using physical correlithm objects, comprising:

receiving input associated with a plurality of real states;

establishing ~~a plurality~~ the plurality of real states from the input, each real state comprising an element of a real space;

encoding the real states as a plurality of physical objects, the physical objects representing a correlithm object by assigning a plurality of values to the real states, each physical object associated with a probability;

projecting the correlithm object to the real space using a measurement basis;

determining a plurality of measurement values corresponding to the measurement basis, the measurement values determined in accordance with the probabilities; and

retrieving the projected correlithm object according to the measurement by:

establishing a plurality of predicted values corresponding to the measurement basis;

comparing the measurement values with the predicted values using a metric; ~~metric; and~~

retrieving the projected correlithm object in accordance with the ~~comparison~~ comparison; and

providing output indicating the projected correlithm object.

45. (Canceled)

46. (Canceled)

47. (Canceled)

48. (Currently Amended) A system for calculating a tensor product, comprising:

a database operable to store data; and

a server system coupled to the database and operable to:

generate a first set of one or more first correlithm objects at a correlithm object generator, each first correlithm object representing a first orthonormal basis vector;

generate a second set of one or more correlithm objects at the correlithm object generator, each second correlithm object representing a second orthonormal basis vector; ~~vector; and~~

perform a tensor operation on the first set and the second set to generate a tensor product of the first set and the second set, the tensor product comprising a plurality of third orthonormal basis ~~vectors~~ vectors; and

provide output indicating the tensor product.

49. (Original) The system of Claim 48, wherein the tensor product comprises a cardinal tensor product.

50. (Original) The system of Claim 48, wherein:

the one or more first correlithm objects are organized as one or more first string correlithm objects;

the one or more second correlithm objects are organized as one or more second string correlithm objects; and

the tensor product comprises an ordinal tensor product.

51. (Currently Amended) Logic for calculating a tensor product, the logic ~~embodied~~ encoded in a computer-readable storage medium and operable to:

generating a first set of one or more first correlithm objects at a correlithm object generator, each first correlithm object representing a first orthonormal basis vector;

generating a second set of one or more correlithm objects at the correlithm object generator, each second correlithm object representing a second orthonormal basis vector; ~~vector; and~~

performing a tensor operation on the first set and the second set to generate a tensor product of the first set and the second set, the tensor product comprising a plurality of third orthonormal basis ~~vectors~~ vectors; and

providing output indicating the tensor product.

52. (Original) The logic of Claim 51, wherein the tensor product comprises a cardinal tensor product.

53. (Original) The logic of Claim 51, wherein:

the one or more first correlithm objects are organized as one or more first string correlithm objects;

the one or more second correlithm objects are organized as one or more second string correlithm objects; and

the tensor product comprises an ordinal tensor product.